

CLAIMS

1. Structure comprising, successively:
 - a first layer of high density polyethylene (HDPE),
 - 5 - a layer of binder,
 - a second layer of EVOH or of a mixture based on EVOH,
 - optionally a third layer of polyamide (A) or of a mixture of polyamide (A) and polyolefin (B).
2. Structure according to Claim 1, also comprising
10 a layer of binder between the second and the third layer.
3. Structure according to either of Claims 1 and 2, in which the binder comprises:
 - 5 to 30 parts of a polymer (D) which itself
15 comprises a mixture of a polyethylene (D1) with a density of between 0.910 and 0.940 and of a polymer (D2) chosen from elastomers, very low density polyethylenes and metallocene polyethylenes, the mixture (D1) + (D2) being co-grafted with an
20 unsaturated carboxylic acid,
 - 95 to 70 parts of a polyethylene (E) with a density of between 0.910 and 0.930,
 - the mixture of (D) and (E) being such that:
 - its density is between 0.910 and 0.930,
 - 25 • the content of grafted unsaturated carboxylic acid is between 30 and 10,000 ppm,
 - the MFI (ASTM D 1238 - 190°C - 2.16 kg) is between 0.1 and 3 g/10 min, the MFI denotes the melt flow index.
- 30 4. Structure according to Claim 3, in which the density of the binder is advantageously between 0.915 and 0.920.
5. Structure according to Claim 3 or 4, in which (D1) and (E) are LLDPEs which have the same comonomer.
- 35 6. Structure according to either of Claims 1 and 2, in which the binder comprises:
 - 5 to 30 parts of a polymer (F) which itself comprises a mixture of a polyethylene (F1) with a

density of between 0.935 and 0.980 and of a polymer (F2) chosen from elastomers, very low density polyethylenes and ethylene copolymers, the mixture (F1) + (F2) being co-grafted with an unsaturated
5 carboxylic acid,

- 95 to 70 parts of a polyethylene (G) with a density of between 0.930 and 0.950,

- the mixture of (F) and (G) being such that:

- its density is between 0.930 and 0.950,
- 10 • the content of grafted unsaturated carboxylic acid is between 30 and 10,000 ppm,

- the MFI (melt flow index) measured according to ASTM D 1238 at 190°C - 21.6 kg is between 5 and 100.

7. Structure according to Claim 1 or 2, in which
15 the binder is a polyethylene grafted with maleic anhydride, having an MFI of 0.1 to 3, a density of between 0.920 and 0.930 and containing 2 to 40% by weight of insolubles in n-decane at 90°C.

8. Structure according to Claim 7, in which the
20 grafted polyethylene is diluted in a non-grafted polyethylene and such that the binder is a mixture of 2 to 30 parts of a grafted polyethylene with a density of between 0.930 and 0.980 and from 70 to 98 parts of a non-grafted polyethylene with a density of between
25 0.910 and 0.940.

9. Structure according to Claim 1 or 2, in which the binder is a mixture consisting of a polyethylene of HDPE, LLDPE, VLDPE or LDPE type, 5 to 35% of a grafted metallocene polyethylene and 0 to 35% of an elastomer,
30 the total being 100%.

10. Structure according to any one of the preceding claims, in which the polyamide of the third layer is a copolyamide.

11. Structure according to any one of the preceding
35 claims, in which the polyolefin (B) of the third layer comprises (i) a high density polyethylene (HDPE) and (ii) a mixture of a polyethylene (C1) and a polymer (C2) chosen from elastomers, very low density

polyethylenes and ethylene copolymers, the mixture (C1) + (C2) being co-grafted with an unsaturated carboxylic acid.

12. Structure according to any one of Claims 1 to 10, in which the polyolefin (B) of the third layer comprises (i) a high density polyethylene (HDPE), (ii) a polymer (C2) chosen from elastomers, very low density polyethylenes and ethylene copolymers (C2) being grafted with an unsaturated carboxylic acid and (iii) a polymer (C'2) chosen from elastomers, very low density polyethylenes and ethylene copolymers.

13. Structure according to any one of Claims 1 to 10, in which the polyolefin (B) of the third layer comprises (i) polypropylene and (ii) a polyolefin which results from the reaction of a polyamide (C4) with a copolymer (C3) comprising propylene and a grafted or copolymerized unsaturated monomer X.

14. Structure according to any one of Claims 1 to 10, in which the polyolefin (B) of the third layer comprises (i) a polyethylene of LLDPE, VLDPE or metallocene type and (ii) an ethylene-alkyl (meth)acrylate-maleic anhydride copolymer.

15. Structure according to any one of Claims 1 to 10, in which the polyamide (A) of the third layer is chosen from mixtures of (i) polyamide and (ii) copolymer containing PA 6 blocks and PTMG blocks and mixtures of (i) polyamide and (ii) copolymer containing PA 12 blocks and PTMG blocks; the ratio of the amounts of copolymer and of polyamide by weight being between 10/90 and 60/40.

16. Structure according to Claim 15, in which the polyolefin (B) of the third layer comprises (i) a polyethylene of LLDPE, VLDPE or metallocene type and (ii) an ethylene-alkyl (meth)acrylate-maleic anhydride copolymer.

17. Structure according to Claim 15, in which the polyolefin comprises two functionalized polymers

comprising at least 50 mol% of ethylene units and which can react to form a crosslinked phase.

18. Devices for transferring or storing fluids and more particularly tubes, tanks, chutes, bottles and
5 containers consisting of the structure according to any one of the preceding claims and in which the barrier layer consisting of the second or of a combination of the second and the third layer is in direct contact with the fluid contained or transported.